

## Chapter 4

### Lesson 4.1.1 Special Angles in the Unit Circle

1. Find the coordinates of the given angle in the unit circle.

·  $\frac{5\pi}{6}$

2. Find the coordinates of the given angle in the unit circle.

·  $-\frac{\pi}{6}$

3. Find the coordinates of the given angle in the unit circle.

·  $\frac{13\pi}{4}$

### Lesson 4.1.2 Sine and Cosine in the Unit Circle

1. State the reference angle that corresponds to the given angle.

·  $\frac{15\pi}{4}$

2. Find the exact value of the given trig expression.

·  $\cos\left(\frac{4\pi}{3}\right)$

3. Find the exact value of the given trig expression.

·  $\sin\left(-\frac{3\pi}{4}\right)$

4. Find the exact value of the given trig expression.

·  $\cos\left(\frac{17\pi}{4}\right)$

5. Show that the given point is on the unit circle. Then find  $\sin P$ ,  $\cos P$ , and  $\tan P$ .

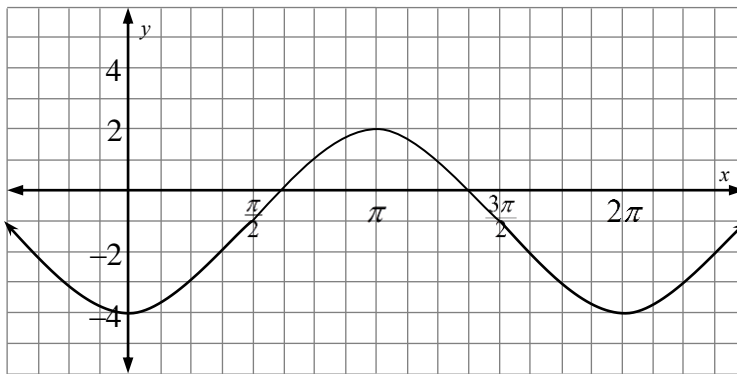
·  $P\left(-\frac{\sqrt{15}}{8}, -\frac{7}{8}\right)$

## Lessons 4.1.3 and 4.1.4 Graphs of Sine and Cosine

1. Graph the given function.

.  $y = -3 \sin\left(x + \frac{\pi}{2}\right)$

2. Write an equation for the transformation of  $y = \sin x$  that has the following properties:
- An amplitude of  $\frac{2}{3}$ .
  - Reflected vertically.
  - Shifted up 7 units.
3. Write an equation involving sine for the graph shown below.



4. Write an equation involving cosine for the graph shown below.

